

# Fresh Market and Saladette Tomato Cultivar Evaluation in Southwest Michigan, 2017

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## Objective

Objective of this trial was to evaluate yield and quality of 18 fresh market and 10 saladette tomato varieties grown in a plasticulture system in Southwest Michigan.

## Summary

The best overall performing fresh market tomato entries, as measured by high total and number one yield, low number two and cull yield, and high fruit weight were USATR 14404, Mountain Majesty, and Red Morning. The best overall performing saladette entries, as measured by high total and number one yield, were Picus, MT-02 and Conan.

## Methods

### *Planting*

On 3 April, 2017, seed of the 28 entries was planted into 72 cell trays and placed into a commercial greenhouse. Transplants were set to the field into a plasticulture system 24 May (saladette-types) or 25 May (fresh market-types) as separate trials. Beds were six-inches high with 5.5 feet between beds and 18 inches between plants in the row (5,280 plants/acre). A drip irrigation line was inserted in the bed at the time of bed shaping and plastic mulch application. Plants were pruned and trained to a stake and weave system and irrigated as needed. Trials were planted and analyzed as a completely randomized design with four replications and eight plants/plot.

### *Fertilizer*

Prior to bed shaping, 33-0-0, 0-0-64, sulfur and Granubor were broadcast and incorporated at a rate of 100, 175, 27 and 7 pounds per acre, respectively. After planting, liquid 28-0-0 was applied through the drip system once a week at a rate of 1-pound nitrogen/acre/day. Drip fertilization began the week of 5 June and ended the week of 14 August for a post-plant total of 84 pounds/acre nitrogen and a season total of 117 pounds/acre nitrogen.

### *Pest Control*

Weeds between rows were controlled by cultivating. Diseases and insects were controlled using commercially recommended practices.

### *Harvest and Data Collection*

Plots were harvested seven times; 10, 16, 22 and 30 August and 6, 12 and 20 September. Fruit was graded into number 1, number 2, and culls. Number one fruit was

counted to determine number one fruit weight. Data from the two trials was analyzed separately.

## Results and Discussion

The 2017 growing season proved interesting. Southwest Michigan experienced wet conditions during late June and early July followed by cool, dry conditions in late July through August and then a warmer than normal September. Incidence of bacterial spot (*Xanthomonas campestris* pv. *vesicatoria*) and bacterial speck (*Pseudomonas syringae* pv. *tomato*) increased during the mid-season wet period, but then was held in check by the cooler, drier conditions in August. It was a better season than experienced in our 2015 trial as reflected in increased yields and an additional harvest.

Total yield for the fresh market cultivars ranged from 2277 to 3698, 25-pound cartons/acre with eight entries being statistically similar in total yield (Table 1). 151G, USATR, USATR14404, Mountain Majesty, SVTD3418 and Red Morning had similar yield of number one fruit at 2795, 2764, 2647, 2491 and 2189 cartons/acre, respectively. Five entries had similarly high average number 1 fruit weights (Table 1). The best overall performers (high total and number one yield, high fruit weight and relatively low number 2 and cull fruit) were USATR 14404, Mountain Majesty, and Red Morning (Table 1). Even though 151G was among the leaders in Total Yield, Yield No. 1 and No. 1 fruit weight it was also among the leaders for No. 2 and cull fruit. Mountain Majesty and Red Morning were also top performers in the 2015 trial. Pictures of each entry were taken at the second harvest (Figures 2 - 6).

Total yield for the saladette tomatoes ranged from 2265 to 3363, 25-pound boxes/acre (Table 2). Picus, MT-02 and Conan had similarly high total yields. These three, plus SV8579TE had similar yield of number one fruit while MT-04 stood alone with the highest average number 1 fruit weight. Picus, MT-02 and Conan performed similarly across all categories. Conan was also among the leaders in the 2015 trial. Pictures of each entry were taken at the second harvest (Figures 7 - 10).

Table 1. Yield in 25-pound cartons per acre and average number 1 fruit size (g) of 18 fresh market tomatoes grown at the Southwest Michigan Research and Extension Center (Benton Harbor, Michigan) in 2017. Plant spacing was 5.5 feet between rows and 18 inches in the row for 5,280 plants/acre. Numbers in bold in the same column are not significantly different from the best performer in that column.

Cultivar	Seed Source	Total Yield	Yield No. 1	No. 1 Fruit Weight	Yield No. 1 small	Yield No. 2	Yield Cull
<b>151G</b>	BE	<b>3698</b>	<b>2795</b>	<b>342</b>	330	<b>163</b>	<b>410</b>
<b>USATR 14404</b>	UA	<b>3639</b>	<b>2764</b>	297	420	<b>235</b>	220
<b>Mt. Majesty</b>	HM	<b>3499</b>	<b>2647</b>	<b>320</b>	550	<b>184</b>	118
<b>SVTD3418</b>	SE	<b>3239</b>	<b>2491</b>	305	430	<b>161</b>	156
<b>Red Mt.</b>	HM	<b>3236</b>	2142	262	<b>774</b>	<b>164</b>	156
<b>Grand Marshall</b>	SK	<b>3190</b>	2036	287	<b>649</b>	<b>215</b>	<b>289</b>
<b>3041</b>	BE	<b>3043</b>	2040	261	<b>799</b>	81	122
<b>SV3207TD</b>	SE	<b>2949</b>	2077	302	376	137	<b>359</b>
<b>Resolute</b>	BE	2934	1924	279	541	137	<b>332</b>
<b>Red Morning</b>	HM	2905	<b>2189</b>	<b>311</b>	325	<b>173</b>	218
<b>3096</b>	BE	2846	1869	248	<b>633</b>	<b>144</b>	200
<b>Camaro</b>	SK	2835	2053	305	314	<b>161</b>	<b>308</b>
<b>Polbig</b>	BE	2801	1455	237	<b>849</b>	<b>249</b>	<b>249</b>
<b>SV7101TD</b>	SE	2722	1993	<b>317</b>	283	<b>179</b>	<b>267</b>
<b>SV1131TD</b>	SE	2704	2021	<b>323</b>	275	89	<b>319</b>
<b>Summerpik</b>	SY	2659	1973	283	310	103	<b>272</b>
<b>Mt. Merit</b>	BE	2497	1476	262	500	<b>156</b>	<b>365</b>
<b>Dixie Red</b>	SE	2277	1591	302	226	115	<b>345</b>
	lsd0.05	<b>752</b>	<b>650</b>	<b>33</b>	<b>231</b>	<b>109</b>	<b>185</b>

Table 2. Yield in 25-pound cartons per acre and average number 1 fruit size in grams for 10 saladette-type tomatoes grown at the Southwest Michigan Research and Extension Center, Benton Harbor, Michigan in 2017. Plant spacing was 5.5 feet between rows and 18 inches in the row for 5,280 plants/acre. Numbers in bold in the same column are not significantly different from the best performer in that column.

Cultivar	Seed Source	Total Yield	Yield No. 1	No. 1 Fruit Wt.	Yield No. 2	Yield Cull
<b>Picus</b>	SE	<b>3363</b>	<b>3006</b>	113	253	<b>104</b>
<b>MT-02</b>	PAN	<b>2994</b>	<b>2600</b>	89	286	<b>108</b>
<b>Conan</b>	UA	<b>2959</b>	<b>2643</b>	134	221	<b>95</b>
<b>MT-04</b>	PAN	2892	2474	<b>170</b>	268	<b>151</b>
<b>SV3543TE</b>	SE	2871	2521	135	232	<b>118</b>
<b>SV8579TE</b>	SE	2835	<b>2549</b>	135	182	<b>104</b>
<b>Daytona</b>	SK	2830	2395	120	284	<b>151</b>
<b>DRD 8549</b>	SE	2714	2444	144	180	<b>90</b>
<b>Plum Regal</b>	BE	2663	2313	126	257	<b>94</b>
<b>MT-01</b>	PAN	2265	2028	112	165	72
	<b>Isd0.05</b>	<b>456</b>	<b>481</b>	<b>10</b>	<b>ns</b>	<b>74</b>



Figure 1. Front row, left to right: Polbig, Mountain Merit, Grand Marshall, Camaro, Red Morning, and Red Mountain. Middle row, left to right: Mountain Majesty, Dixie Red, SV1131TD, SV3207TD, SV7101TD and SVTD3418. Back row, left to right: USATR 14404, Summerpik, 3096, 3041, 151G and Resolute.





**Figure 2.** Top left: 151G; top right: USATR 14404; bottom left: Mountain Majesty; bottom right: SVTD33418.





**Figure 3.** Top left: Red Mountain; top right: Grand Marshall; bottom left: 3041; bottom right: SV3207TD.





**Figure 4.** Top left: Resolute; top right: Red Morning; bottom left: 3096; bottom right: Camaro.





**Figure 5.** Top left: Polbig; top right: SV7101TD; bottom left: SV1131TD; bottom right: Summerpik.





**Figure 6.** Left: Mountain Merit; right: Dixie Red.



**Figure 7.** Bottom row, left to right: Plum Regal, MT-01, MT-02, MT-04, and Daytona. Top row, left to right: Picus, DRD 8549, SV3543TE, SV8579TE, and Conan.





**Figure 8.** Top left: Picus; top right: MT-02; bottom left: Conan; bottom right: MT-04.





**Figure 9.** Top left: SV3543TE; top right: SV8579TE; bottom left: Daytona; bottom right: DRD8549.



**Figure 10.** Left: Plum Regal. Right: MT-01.